Trouble Shooting Guide, Standard

Applicable for R310s and R310sc

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1 Explanations

For component placing see doc.1078-2/FEA 209 544/31.

1.1 Abbreviations

B: Crystal.

C: Capacitor.

D: Digital circuit.

F: Over voltage protection.

H: Buzzer, LED, pads for display.

J: Connector.

L: Coil.

N: Analogue circuit.

R: Resistor.

S: Keyboard pads.

U: BALUN Component that converts a balanced signal to unbalanced or the other way around.

V: Transistor, diode.

X: Contact surface on the circuit board.

Z: Filter.

DCIO: DC voltage through the system connector for charging.

GND: Ground.

LED3K: Signal that activates the background illumination.

ONSWAn: Voltage from the On/Off key that starts the phone.

RTC: Real Time Clock. Clock that keeps track of the time.

SIMCLK: Signal from the processor used for communication to SIM, clock signal.

SIMDAT: Signal from the processor used for communication to SIM, data signal.

SIMRST: Signal from the processor used for communication to SIM, reset signal.

SIMVCC: Feed voltage for SIM.

VBATT: Battery voltage.

VCORE: DC voltage for the processor and memory at, for instance, stand by mode. Lower than VDIG.

VDIG: DC voltage for the processor and memory.

VDSPC: DC voltage for the DSP (Digital Signal Processor).

VLCD: DC voltage that controls the contrast for the display.

VRAD: DC voltage for the radio part except for the synthesizer.

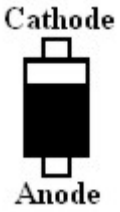
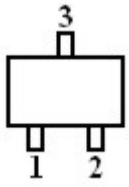
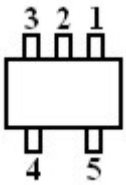
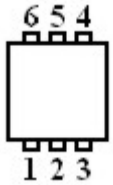
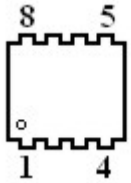
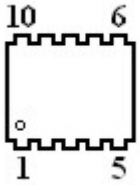
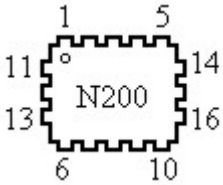
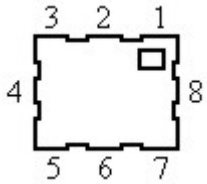
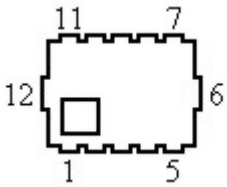
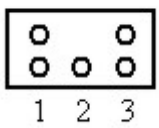
V380B: DC voltage for the radio part.

VRTC: DC voltage for the Real Time Clock.

VVCO: DC voltage for the synthesizer.

I2C: Communications standard for two-way communication using only 2 wires, clock and data.

1.2 Pin Placing

		
Single diode (PIN diode)	Electrolytic capacitor	Double diode or single transistor
		
Five pin circuit (usually voltage regulator)	Six pin circuit	Eight pin circuit
		
Ten pin circuit	Crystal	N200
		
N330 and N331	N551	J603
		
X100		

2 Network Problems

2.1 Find out if the fault is RX- or TX-related

Connect the phone to a GSM test instrument and try to get SERV at an input signal strength of -68.5dBm.

If the phone does not get SERV at one or both bands, go to section 2.2.

If the phone gets SERV, go to section 2.3.

2.2 The phone does not get SERV

Open the phone and check for liquid damage. Make sure that the antenna connector in the frame is not mechanically damaged, dirty or oxidised. Clean or replace it if it is needed. Also check that the antenna connector surface on the board is clean and that it is not oxidised.

Check the soldering of N234, N200, Z200, Z201 and N201.

Measure the resistance of R220, R221, R222 and R223 (all 2.7 kohms).
Replace it if it is incorrect.

Check that C312 is correctly soldered.

If the fault is not found so far, the problem is probably within the LO part or the losses in the signal path might be too large. It is also possible that the feed voltages are incorrect. Power up the board and start it by pressing the On/Off key.

Measure the VRAD voltage on C501, on the pin close to N700 (3.8V).
If the voltage is incorrect, send the unit on according to the local company directives.

Measure the V380B voltage on C500, on the pin close to R427 (3.8V). If the voltage is incorrect, send the unit on according to the local company directives.

Measure the VVCO voltage on pin 5 of N502 (3.8V).
If the voltage is correct, go to section 2.2.1.

If the voltage is incorrect, measure the voltage on L500 (VBATT).
If the voltage on L500 is correct, measure the voltage on V500, on the pin close to C401 (4.7 V).
If the voltage on V500 is correct, measure the voltage on pin 1 of N502 (4.7 V).
If the voltage on pin 1 of N502 is correct, measure the voltage on pin 3 of N502 (3.8V).
If the voltage on pin 3 of N502 (3.8V) is correct, replace N502.

If the voltage on pin 3 of N502 (3.8V) is incorrect send the unit on according to the local company directives.

If the voltage on pin 1 of N502 is incorrect send the unit on according to the local company directives.

If the voltage at V500 is 3.8V, replace V500, otherwise send the unit on according to the local company directives.

If the voltage at L500 is incorrect, measure the resistance of L500 (0 ohms).
If the resistance is correct, send the unit on according to the local company directives.

If the resistance is too high, replace L500.

2.2.1 Check the feed voltages

VRAD voltage for N234:

Measure the voltage on pin 5 of N234 (3.8V).
If the voltage is incorrect, measure the resistance of L211 (0 ohms).
If the resistance is incorrect, replace L211.

If the resistance of L211 is correct, measure the resistance from L211 to ground (>1 Mohms).
If it is incorrect, replace C214, C211 and C212.

Measure the voltage on pin 47 of N234 (3.8V).
If the voltage is incorrect, measure the resistance of R345 (18 ohms).
If the resistance is incorrect, replace R345.

If the resistance of R345 is correct, measure the resistance from pin 47 of N234 to ground (>0.5 Mohm).
If the resistance is low, replace C345.

Measure the voltage on pin 62 of N234 (3.8V).
If the voltage is incorrect, measure the resistance of L370 (0 ohms).
If the resistance is incorrect, replace L370.

If the resistance of L370 is correct, measure the resistance from L370 to ground (>0.5 Mohm).
If the resistance is low, replace C373 and R362.

The VVCO voltage for D300:

Measure the voltage on R303 (3.8 V).
If the voltage is incorrect, measure the resistance of R303 (18 ohms).
If the resistance is incorrect, replace R303.

If the resistance of R303 is correct, measure the resistance from R303 to ground (130 kohms).
If the resistance is low, replace C303.

If the fault remains, send the unit on according to the local company directives.

2.3 Connect a call at –68.5dBm input signal and power level 5

If you are able to connect a call, go to section 2.4.

If you are not able to connect a call, open the phone and check for liquid damage.

Make sure that the antenna connector in the frame is not mechanically damaged, dirty or oxidised. Clean or replace it if needed. Also check that the antenna connector surface on the board is clean and not oxidised.

Check the soldering on N551, N400 and the components around them.

Try to connect a call again.

If you still are not able to connect a call, send the unit on according to the local company directives.

2.4 Read the RX-level while call is connected

Make sure that the output power is 31-35 dBm for GSM power level 5 and that the RX-level value is 43±3 steps.

Lower the input signal to –102dBm and make sure that the RX-level value is 6-12 steps and that the RX-quality value is 0-2 steps.

If the values are within the limits, but you are not able to connect a call on the “real” net, make sure that the phone has not been **locked out of the system due to theft**.

If the RX-level value is too high the phone needs to be calibrated, send the unit on according to the local company directives.

If the RX-level value is less than 38 steps at an input signal of –68.5dBm or less than 5 steps at an input signal of –102dBm then the fault is RX-related.

Open the phone and check for liquid damage.

Make sure that the antenna connector in the frame is not mechanically damaged, dirty or oxidised. Clean the connector or replace it if it is needed. Also check that the antenna connector surface on the board is clean and not oxidised.

Check the soldering on N200, Z200, Z201 and N201.

Remove L204 and measure the resistance from pin 2 of Z200 to ground (>100 kohms). The resistance is usually only a few ohms when Z200 is faulty.
If the resistance is incorrect, replace Z200 and mount L204.

If the fault remains the unit may have to be calibrated, send the unit on according to the local company directives.

3 On/Off Problems

3.1 Type of fault

Make an external visual check of the phone:

Make sure that the battery connectors are intact, clean and fully functional.

Make sure that there is no liquid damage on the system connector. Replace if needed.

Insert a fully charged battery and press the On/Off key.

- If the phone starts without the On/Off key being pressed, go to section 3.2.
- If the phone starts (lights up the background illumination, asks for SIM/Pin, seeks net…), check the charging function by connecting a charger to the system connector.
  If the charging function is faulty, go to chapter 6 (“Capacity/Charging problems”).
  If the charging works, there is probably nothing wrong with the phone or the fault is intermittent.
- If the phone does not start, insert a dummy battery and keep the On/Off key pressed.
  If the phone consumes more than 50 mA, go to section 3.3.
  If the phone consumes 15-30 mA, go to section 3.4.
  If the phone consumes less than 15 mA, go to section 3.5.
- If the phone turns off after a few seconds, go to section 3.6.

3.2 Starts immediately after inserting a battery

Open the phone and check for liquid damage.

Replace the dome foil. Make sure that the keypads are clean before mounting a new one.

If the fault remains, send the unit on according to the local company directives.

3.3 Consumes more than 50mA

Open the phone and check for liquid damage.

Power up the board and press the On/Off key.

Measure the voltage on V500, on the pin close to C401 (4.7 V).
If the voltage is 3.8 V on both sides, replace V500.

If the fault remains, send the unit on according to the local company directives.

3.4 Consumes 15-30mA

Open the phone and check for liquid damage.

Try to program the phone in the flash programmer.
If programming the phone is impossible, measure the resistance over C615 (>50 kohms).

If the resistance over C615 is less, replace V607.
If that does not help, replace C615.

If the resistance over C615 is correct send the unit on according to the local company directives.

3.5 Consumes less than 15 mA

3.5.1 Consumes no current

Open the phone and check for liquid damage.

Make sure that X100 is not dirty, damaged or incorrectly soldered.

Replace the dome foil. Make sure that the keypads are clean before mounting a new one.

Power up the board.

Measure the VBATT voltage on C400, on the pin close to V400 (3.8V).
If the VBATT voltage is correct, measure the voltage on pin 2 of V610 (3.8V).
If the voltage on V610:2 is correct, replace V610.

If the voltage on V610:2 is incorrect, send the unit on according to the local company directives.

If the VBATT voltage on C400 is incorrect, replace X100.

If the fault remains, send the unit on according to the local company directives.

3.5.2 Consumes less than 15 mA

Open the phone and check for liquid damage.

Power up the board and start it by pressing the On/Off key.

Measure the VDIG voltage on C703, on the pin close to R706 (2.7 V).
If the voltage is incorrect, measure that the resistance of C703 is more than 150 kohms.
If the resistance is correct, send the unit on according to the local company directives.

If the resistance is incorrect, replace C703.

Measure the VCORE voltage at C702, on the pin close to R428 (2.5 V).
If the voltage is incorrect measure the resistance of C702 (>200 kohms).
If the resistance is correct, send the unit on according to the local company directives.

If the resistance is incorrect, replace C702.

If VDIG and VCORE are correct measure the VDSPC voltage on N740 pin 5 (1.8 V).
If the VDSPC voltage is incorrect, replace N740.
If VDSPC is incorrect after the replacement, measure the resistance of C740 (>20 kohms).
Replace C740 if it is incorrect.

If the fault remains, send the unit on according to the local company directives.

3.6 Turns off after a few seconds

Open the phone and check for liquid damage.

Power up the board and start it by pressing the On/Off key.

Measure the VDIG voltage on C703, on the pin close to R706 (2.7 V)
If the voltage is incorrect, measure that the resistance of C703 is more than 150 kohms.
If the resistance is correct, send the unit on according to the local company directives.

If the resistance is incorrect, replace C703.

Measure the VCORE voltage at C702, on the pin close to R428 (2.5 V).
If the voltage is incorrect measure the resistance of C702 (>200 kohms).
If the resistance is correct, send the unit on according to the local company directives.

If the resistance is incorrect, replace C702.

Measure the VDSPC voltage on N740 pin 5 (1.8 V).
If the voltage is incorrect, replace N740.
If VDSPC is incorrect after the replacement, measure the resistance of C740 (>20 kohms).
Replace C740 if it is incorrect.

If the fault remains, send the unit on according to the local company directives.

4 Audio Problems

4.1 Type of fault

Connect a call from the phone that is to be tested to a reference phone.

Check the function of the microphone and the earphone.

If the phone sounds strange (there is noise, distortion or the sound is “chopped”), send the unit on according to the local company directives.

Connect a handsfree unit to the system connector of the phone.

Check the functionality of the handsfree. Do this by first speaking into the reference phone while listening to the handsfree speaker, and then speaking into the handsfree microphone while listening to the earphone of the reference phone.

- If there is little or no sound in the earphone of the phone, go to section 4.2.
- If neither the handsfree speaker nor the earphone of the phone works, send the unit on according to the local company directives.
- If the sensitivity of the microphone is poor (little or no sound in the reference phone), go to section 4.3.
- If neither the handsfree microphone nor the microphone of the phone works, send the unit on according to the local company directives.
- If neither the earphone nor the microphone of the phone works, send the unit on according to the local company directives.
- If the handsfree microphone does not work, go to section 4.4.
- If the handsfree speaker does not work, go to section 4.5.
- If neither the handsfree speaker nor the handsfree microphone works, go to section 4.6.

4.2 Earphone does not work

Open the phone and check for liquid damage.

Make sure that the X810 and X811 connectors are not mechanically damaged or incorrectly soldered.

Replace the earphone. Test the phone again.

If the fault remains, send the unit on according to the local company directives.

4.3 Microphone does not work

Open the phone and check for liquid damage.

Check that the microphone contact surface on the board is clean. Replace the microphone rubber gasket and the microphone.

Assemble the phone and test the microphone again.

If the fault remains, open the phone and measure the resistance of R862 (0 ohm), R861 (1.5 kohms), R863 (1 kohm) and R864 (22 kohms). Replace the corresponding component if it is incorrect.
If all the resistances are correct, replace C863.

If the fault remains, send the unit on according to the local company directives.

4.4 Handsfree microphone does not work

The fault arises when the audio path is interrupted somewhere between the handsfree microphone (connected through the system connector) and the input of N800. The audio path is shown in *Fig. 4.1*.

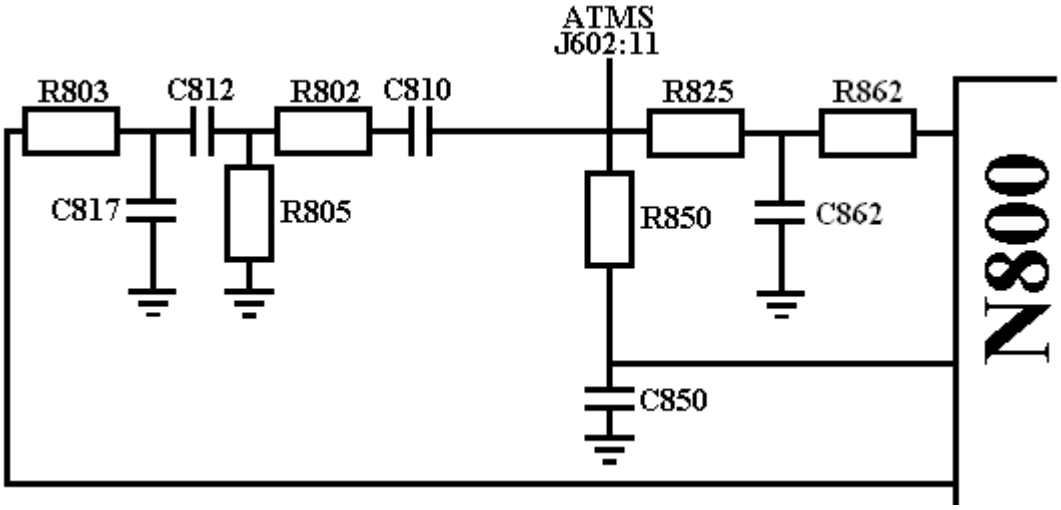


Fig. 4.1

Open the phone and check for liquid damage, especially around the system connector. Make sure that the system connector is not damaged.

Make sure that all the components in *Fig. 4.1* (R802, R803, R805, R850, R862, R825, C810, C812, C817, C850 and C862) are mounted on the circuit board.

Measure the resistance of C810 (>60 kohms), C812 (>1 Mohm), C817 (>1 Mohm), R802 (3.9 kohms), R805 (15 kohms), R803 (1 kohm), R862 (0 ohm), R850 (47 kohms) and C850 (>90 kohms). Replace the corresponding component if it is incorrect.

If the fault remains, send the unit on according to the local company directives.

4.5 Handsfree speaker does not work

The fault arises when the audio path is interrupted somewhere between the output of N800 and the handsfree microphone (connected through the system connector). The audio path is shown in *Fig. 4.2*.

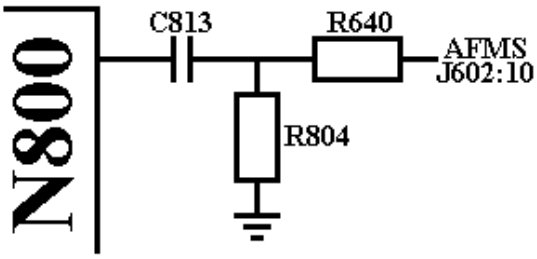


Fig. 4.2

Open the phone and check for liquid damage, especially around the system connector.

Make sure that the system connector is not damaged.

Measure the resistance of R804 (100 kohms), R640 (82 ohms) and C813 (>1 Mohm). Replace the corresponding component if it is incorrect.

Measure the resistance from C640 to pin 10 of J602 (0 ohms).
If the resistance is incorrect, the foil is damaged. Send the unit on according to the local company directives.

If the fault remains, send the unit on according to the local company directives.

4.6 Neither the handsfree microphone nor the handsfree speaker works

Replace J602.

If the fault remains, send the unit on according to the local company directives.

5 Display/Illumination Problems

5.1 Type of fault

Insert a fully charged battery into the phone and start it up by pressing the On/Off key.

- If the phone does not start, go to chapter 3 (“On/Off problems”).
- If the display is missing one or more segments, go to section 5.2.
- If nothing is shown in the display, go to section 5.3.
- If the background illumination does not work, go to section 5.4
- If the top indicator does not start to flash green when the phone has got SERV, go to section 5.5.

When the phone has got SERV and the top indicator flashes green, reduce the battery voltage to 3.2V. By doing this, the top indicator should start to flash red, the battery indicator should show an empty flashing battery and the phone should warn with a beep. If none of these things happens, the phone needs a battery calibration.

- If the phone beeps and the battery indicator shows an empty flashing battery but the top indicator does not flash red, go to section 5.5.

5.2 Segments are missing

Replace the display and try again.

5.3 Nothing is shown in the display

Open the phone and check for liquid damage.

Power up the board and start it up without the display mounted.

Fig. 5.1

Pad 1:	VLCD	5.8 V
Pad 2:	VDD	2.75 V
Pad 3:	SDA	2.75 V
Pad 4:	VSS	0 V
Pad 5:	SCL	2.75 V

Measure the voltages on the display pads (H623, *Fig. 5.1*).
If SDA or SCL voltage is missing, check the VDIG voltage (2.75V).
If the VDIG voltage is correct, measure the resistance of R619 (6.8 kohms), R620 (6.8 kohms), R615 (0 ohm) and R614 (0 ohm). Also measure the resistance of C670, C671, C672, C673 and C674 (>1Mohm). If any of the resistances are incorrect, replace the corresponding component.

If the fault remains, change the display.

5.4 Background illumination glows faintly or does not work at all

Open the phone and check for liquid damage.

Clean X750 if needed.

Replace the illumination panel.

Power up the board and start it by pressing the On/Off key.

NOTE! All measurements are done with the illumination on. The illumination is only lit for about 25 seconds, press any key to light it up again.

Measure the voltage on pin 6 and 8 of N750 (26 V).
If the voltage is incorrect, measure the voltage on pin 10 (3.8 V), pin 5 (2.7 V), pin 2 (0.9 V) and on pin 4 (1.4 V) of N750.

If the voltage on pin 10 (3.8 V) is incorrect, measure the resistance of L750 (23 ohms), C751 (>1 Mohm) and the resistance from L750 to VBATT (0 ohm).
If any of the L750 or C751 resistances are incorrect, replace the corresponding component.
If the resistance from L750 to VBATT is incorrect, the foil is damaged. Send the unit on according to the local company directives.

If the voltage on pin 5 (2.7 V) is incorrect, send the unit on according to the local company directives.

If the voltage on pin 2 (0.9 V) or 4 (1.4 V) is incorrect, send the unit on according to the local company directives.

If the voltages on pin 10,5,2 and 4 are correct, replace L750, C750 and R750.

If the fault still remains, replace N750.

If the fault remains, send the unit on according to the local company directives.

5.5 Red or green top indicator does not work

Open the phone and check for liquid damage.

Make sure that the double LED (H650) is correctly soldered.

If the soldering is correct, power up the board and start it by pressing the On/Off key.

Measure the voltage on pin 1 of H650 (2.7 V).
If the voltage is correct, replace H650 (assemble the phone and test as described in 9.1).

If it is incorrect, measure the resistance of R646 (220 ohms).
If the resistance is incorrect, replace R646.

If the resistance is correct the foil is damaged. Send the unit on according to the local company directives.

If the fault remains, send the unit on according to the local company directives.

6 Capacity/Charging Problems

Make a visual check of the battery connector and the system connector. Replace them if needed.

Insert a fully charged battery into the phone and start it up by pressing the On/Off key. Turn the phone off and connect a charger to the system connector to make sure that a fault really exists.

Open the phone and check for liquid damage.

Measure the resistance of R710 (0.1 ohms). If it is incorrect, send the unit on according to the local company directives.

Measure the resistance of R711 (0 ohms). Replace it if it is incorrect.

If the resistances are correct, replace V710.

If the fault remains, send the unit on according to the local company directives.

7 SIM Problems

7.1 What is SIM-fault

Insert a functional SIM-card and a charged battery into the phone.

If **“Wrong card”** or **“Insert correct card”** is displayed on the display when starting the phone it means that the phone is SIM-locked.

NOTE! If the phone shall be SIM-locked, make sure that a correct SIM-card is used.

If the fault remains, send the unit on according to the local company directives.

If the phone displays **“Phone lock”** on the display it means that the customer has locked the phone with a personal code. It will be unlocked in the reset program. (Available in the Built Swap process)

If **“PIN:”** or **“Enter PIN:”** is displayed, it means that the SIM-card has been locked with a personal code.

It is only SIM-fault if **“Insert card”** is displayed.

7.2 Type of fault

Open the phone and check for liquid damage.

Replace J603.

Measure the resistance between pin 1 and pin 5 of J603 (1-15 kohms).
If the resistance is low, replace C734 and C736.
If the fault remains, replace C735.

Measure the resistance of R734 (10 kohms). Replace it if it is incorrect.

Measure the resistance of R730 (15 kohms). Replace it if it is incorrect.

Measure the resistance of R733 (33 ohms). Replace it if it is incorrect.

Measure the resistance of R731 (33 ohms). Replace it if it is incorrect.

Measure the resistance of R732 (6.8 ohm). Replace it if it is incorrect.

If the fault remains, send the unit on according to the local company directives.

8 Key Problems

8.1 Type of keyboard fault

Insert a fully charged battery and a correctly working SIM-card into the phone. Start it up by pressing the On/Off key.

- If the phone does not start at all, go to chapter 3 (“On/Off problems”).
- If the phone starts, but none of the keys are functional, go to section 8.2.

Press all the keys (including the volume keys) to verify which of the keys that are working. The verification is most easily done this way:

Go to “Menu/Settings/Sounds&Alerts/Key sound” and choose “Click”.

Press the “1”, “2”, “3”…”*”, “0”, “#” keys. A clicking sound should be heard and the corresponding symbol should appear in the display at every key pressed. Then press the “clr”, “Yes”, “No”, “<” and “>” keys. The “clr” key makes the phone erase the symbols in the display one by one. When pressing the “Yes” key the phone should try to connect a call and pressing the “No” key should make it disconnect the call while the “<” and “>” keys make you skim through the menu.

When you press the volume keys you should get information about Date, Profile, Standby time and Talk time shown in the display.

- If only the volume keys are faulty, go to section 8.3.

8.2 One or more of the keys are out of order

Open the phone and check for liquid damage.

Remove the dome foil, clean the pads and mount a new dome foil.

Test the keys as described in 8.1 again.

If the fault remains, send the unit on according to the local company directives.

8.3 Volume keys are out of order

Replace the volume switch.

If the fault remains, send the unit on according to the local company directives.

9 Alert Problems

9.1 Type of fault

Insert a dummy battery and a correctly working SIM-card into the phone and start it by pressing the On/Off key. Wait for the phone to get SERV (to the test instrument or on the net).

If the phone does not beep at startup, use the menu to increase the ring volume.

- If there is little or no sound, go to section 9.2.

Use the menu to set the vibrator to “ON” mode.

- If the phone does not vibrate when the settings are stored, go to section 9.3.

9.2 Buzzer faint or dead

Open the phone and check for liquid damage.

Make sure that the buzzer (H600) is correctly soldered.
If the soldering is correct, replace H600.

Assemble the phone and try again as described in 9.1.

Open the phone, power up the board and start it by pressing the On/Off key.

Measure the voltage on pin 2 of H600 (3.8 V, *Fig. 9.1*).

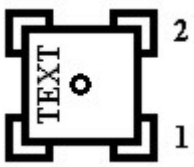


Fig. 9.1

If the voltage is incorrect, replace R603.
If replacing R603 does not help the foil is damaged. Send the unit on according to the local company directives.

Measure the resistance of R651 (1 kohm). Replace it if it is incorrect.

Replace V606.
If that does not help, replace V605.

9.3 Vibrator does not work

Open the phone and check for liquid damage.

Make sure that the vibrator connector pads and X680 are not dirty or damaged.

Power up the board and start it by pressing the On/Off key.

Measure the voltage on pin 2 of V621 (3.7V).
If the voltage is incorrect the foil is damaged. Send the unit on according to the local company directives.

Measure the voltage on pin 3 of V623 (3.7V).
If the voltage is incorrect, measure the resistance of R683 (100 kohms). Replace it if it is incorrect.

If the voltage is correct, replace V621 and V623. Make sure that R627, R628 and C681 are mounted and correctly soldered. Measure the resistance of R682 (1 kohm).
If the resistance is incorrect, replace R682.

If the fault remains, send the unit on according to the local company directives.

10 Other Problems

10.1 RTC

10.1.1 Type of fault

Start the phone with a correctly working SIM-card and a fully charged battery. Set the correct time. Remove the battery and insert it after one minute.

- If the phone clock is 00:00, go to section 10.1.2.

Compare to the correct time.

- If the clock is halted or speeding, go to section 10.1.3.

10.1.2 The clock says 00:00 after reinserting the battery

Open the phone and make sure that the backup capacitor (C720) is correctly soldered.

If it is, replace it. Assemble the phone, start it up and set the correct time. Wait a few minutes for the backup capacitor to charge. Remove the battery and reinsert it after one minute. Make sure that the fault has been solved (the backup capacitor needs 20 minutes of charging before reaching full capacity). Compare to the correct time.

If the clock is halted or speeding, go to section 10.1.3.

10.1.3 The clock is halted or speeding

Open the phone and check the soldering on B600.
If the soldering is correct, replace B600.

If that does not help, replace C690 and C691.

Assemble the phone and compare to the correct time.

If the fault remains, send the unit on according to the local company directives.

11 Revision History

Rev.	Date	Changes / Comments
A	2000-05-12	
B	2000-07-17	Changes in sections 6 and 7.2 Picture added to section 9.2

Part List, Standard

Applicable for R310s and R310sc

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1 Mounting Drawings

The Mounting drawings show the components position on the printed board. The Mounting drawings can be found in document 1078-2/FEA 209 544/31.

Board Number	Mounting Drawing
ROA 117 3982 R1E	1078-ROA 117 3982 Rev.D

2 Component List

- Pos.:
  The components position number on the board.
- Description:
  Type of component mounted on the position.
- Part Number:
  The components part number (or reference to Board Revision Changes) is specified for all components that can be replaced according to the Standard Repair Process.
- Ref.:
  If the component is mentioned in the Trouble Shooting Guide, Standard, the chapter is written in this column. Not all of the components that can be replaced according to the Standard Repair Process are mentioned in the Guide.
- Comments:
  Special soldering requirement.
  Functions that are affected if the component is replaced. The specified verification should be paid extra attention when testing the telephone.
  For components that can be replaced only by using the Advanced Repair Process, "Advanced" is written, and for components not possible to replace, "Not available".

2.1 ROA 117 3982

ROA 117 3982				
Pos.	**Description**	**Part Number**	**Ref.**	**Comments**
	Antenna coaxial	RNV 991 2134/1		
	Frame	SXK 107 237/1		
	Support	SXA 105 9642/1		
	Dome foil	SXK 107 216/1		
ANT1	Soldering plate			Not available
B320	Quartz crystal unit			Advanced
B600	Quartz crystal unit	RTM 501 679/1 R1A	Other problems	Verify Real Time Clock
C100	Capacitor	RJC 463 3022/22		
C101	Capacitor	RJC 463 3022/22		
C200	Capacitor	RJC 463 3022/22		
C201	Capacitor	RJC 463 3022/33		
C202	Capacitor	RJC 463 3022/1		
C203	Capacitor	RJC 463 3022/22		
C205	Capacitor	RJC 463 3022/33		
C206	Capacitor	RJC 463 3022/1		
C207	Capacitor	RJC 463 3022/1		
C208	Capacitor	RJC 463 3022/1		
C209	Capacitor	RJC 463 3022/27		
C210	Capacitor	RJC 463 3022/27		
C211	Capacitor	RJC 463 3023/1	Network problems	
C212	Capacitor	RJC 463 3023/1	Network problems	
C214	Capacitor	RJC 464 3025/1	Network problems	
C220	Capacitor	RJC 463 3023/1		
C221	Capacitor	RJC 463 3023/1		
C300	Capacitor	RJC 464 3025/1		
C301	Capacitor	RJC 463 3022/56		

ROA 117 3982				
Pos.	**Description**	**Part Number**	**Ref.**	**Comments**
C302	Capacitor	RJC 463 3023/1		
C303	Capacitor	RJC 516 4047/47	Network problems	
C304				Not mounted
C311	Capacitor	RJC 464 3024/12		
C312	Capacitor	RJA 532 4055/15	Network problems	
C313	Capacitor	RJC 463 3023/1		
C320	Capacitor			Advanced
C321	Capacitor			Advanced
C323	Capacitor			Advanced
C324	Capacitor			Advanced
C330	Capacitor	RJC 516 4047/47		
C331	Capacitor	RJC 463 3022/1		
C332				Not mounted
C333	Capacitor	RJC 463 3022/33		
C334				Not mounted
C335	Capacitor			Advanced
C336	Capacitor			Advanced
C337	Capacitor			Advanced
C338	Capacitor			Advanced
C339	Capacitor	RJC 516 3058/1		
C340	Capacitor	RJC 463 3022/22		
C341	Capacitor	RJC 463 3022/22		
C342	Capacitor	RJC 464 3025/1		
C343	Capacitor	RJC 463 3022/22		
C344	Capacitor	RJC 463 3022/22		
C345	Capacitor	RJC 464 3036/22	Network problems	
C346	Capacitor	RJC 516 4047/47		
C360	Capacitor			Advanced
C361	Capacitor			Advanced
C362	Capacitor			Advanced
C363	Capacitor			Advanced
C372	Capacitor	RJC 464 3025/1		
C373	Capacitor	RJC 464 3025/1	Network problems	
C380	Capacitor			Advanced
C381	Capacitor			Advanced
C382	Capacitor	RJC 464 3035/82		
C384	Capacitor	RJC 463 3022/68		
C400	Capacitor	RJC 516 3058/1	On/Off problems	
C401	Capacitor	RJC 464 3025/1		
C410	Capacitor	RJE 326 5102/47B		
C412	Capacitor	RJC 463 3022/22		
C413	Capacitor	RJC 463 3022/22		
C421				Not mounted
C422	Capacitor	RJC 464 3023/39		
C423	Capacitor	RJC 464 3023/47		
C427	Capacitor	RJC 464 3023/22		
C430	Capacitor	RJC 464 3024/1		
C431	Capacitor	RJC 464 3023/47		
C440	Capacitor	RJC 464 3025/1		
C441	Capacitor	RJC 464 3025/1		
C442	Capacitor	RJC 464 3025/1		

ROA 117 3982				
Pos.	**Description**	**Part Number**	**Ref.**	**Comments**
C443	Capacitor	RJC 464 3025/1		
C444	Capacitor	RJC 464 3025/1		
C445	Capacitor	RJC 464 3025/1		
C450	Capacitor	RJC 463 3021/39		
C451	Capacitor	RJC 463 3021/22		
C452	Capacitor	RJC 463 3020/5		
C453	Capacitor	RJC 463 3022/1		
C454	Capacitor	RJC 463 3022/33		
C455	Capacitor	RJC 463 3022/1		
C456	Capacitor	RJC 463 3021/27		
C500	Capacitor	RJC 516 3058/1	Network problems	
C501	Capacitor	RJC 516 3058/1	Network problems	
C502	Capacitor	RJC 516 3058/1		
C503	Capacitor	RJC 516 3058/1		
C520	Capacitor	RJC 516 4047/47		
C521	Capacitor	RJC 464 3025/1		
C522	Capacitor	RJC 516 4047/47		
C530	Capacitor	RJC 464 3024/27		
C594	Capacitor	RJC 463 3022/22		
C601	Capacitor	RJC 463 3022/22		
C602	Capacitor	RJC 464 3025/1		
C603	Capacitor	RJC 464 3025/1		
C604	Capacitor	RJC 464 3025/1		
C605	Capacitor	RJC 464 3025/1		
C606	Capacitor	RJC 464 3025/1		
C607	Capacitor	RJC 464 3025/1		
C608	Capacitor	RJC 464 3025/1		
C609	Capacitor	RJC 464 3025/1		
C610	Capacitor	RJC 464 3025/1		
C611	Capacitor	RJC 464 3025/1		
C612				Not mounted
C613	Capacitor	RJC 464 3025/1		
C614	Capacitor	RJC 464 3025/1		
C615	Capacitor	RJC 464 3047/1	On/Off problems	
C634				Not mounted
C635	Capacitor	RJC 463 3023/1		Verify display function
C636	Capacitor	RJC 463 3023/1		Verify display function
C637	Capacitor	RJC 464 3035/68		Verify display function
C639	Capacitor	RJC 464 3025/1		Verify display function
C640	Capacitor		Audio problems	Advanced
C641	Capacitor			Advanced
C642	Capacitor			Advanced
C643	Capacitor			Advanced
C650	Capacitor	RJC 463 3022/22		
C651	Capacitor	RJC 463 3022/22		
C652	Capacitor	RJC 464 3036/1		
C653				Not mounted
C654	Capacitor	RJC 463 3022/68		Verify flash function
C655	Capacitor	RJC 463 3023/1		Verify flash function
C656	Capacitor	RJC 463 3022/68		Verify flash function
C657	Capacitor	RJC 463 3023/1		Verify flash function

ROA 117 3982				
Pos.	**Description**	**Part Number**	**Ref.**	**Comments**
C658	Capacitor	RJC 463 3022/1		
C659				Not mounted
C660	Capacitor	RJC 464 3036/1		
C667	Capacitor	RJC 464 3047/1		
C668	Capacitor	RJC 464 3024/1		
C669				Not mounted
C670	Capacitor	RJC 463 3022/22	Display/Illumination problems	Verify display function
C671	Capacitor	RJC 463 3022/22	Display/Illumination problems	Verify display function
C672	Capacitor	RJC 463 3022/22	Display/Illumination problems	Verify display function
C673	Capacitor	RJC 463 3022/22	Display/Illumination problems	Verify display function
C674	Capacitor	RJC 464 3025/1	Display/Illumination problems	Verify display function
C680	Capacitor	RJC 464 3023/82		
C681	Capacitor	RJC 464 3023/82	Alert problems	Verify vibrator function
C682	Capacitor	RJC 516 3525/68		Verify vibrator function
C690	Capacitor	RJC 463 3022/18	Other problems	Verify Real Time Clock
C691	Capacitor	RJC 463 3022/18	Other problems	Verify Real Time Clock
C692	Capacitor	RJC 464 3025/1		Verify Real Time Clock
C701	Capacitor	RJC 464 3036/1		
C702	Capacitor	RJC 516 3557/47	On/Off problems	
C703	Capacitor	RJC 516 3557/47	On/Off problems	
C704				Not mounted
C705	Capacitor	RJC 516 4047/47		
C710		0		Not mounted
C720	Capacitor	RJE 371 1255/7	Other problems	Verify Real Time Clock
C730				Not mounted
C731				Not mounted
C732	Capacitor	RJC 463 3022/22		Verify SIM function
C733				Not mounted
C734	Capacitor	RJC 464 3047/1	SIM problems	Verify SIM function
C735	Capacitor	RJC 464 3035/68	SIM problems	Verify SIM function
C736	Capacitor	RJC 464 3047/1	SIM problems	Verify SIM function
C740	Capacitor	RJC 516 3557/47	On/Off problems	
C750	Capacitor	RJC 543 4674/27	Display/Illumination problems	Verify illumination function
C751	Capacitor	RJC 464 3036/1	Display/Illumination problems	
C753	Capacitor	RJC 464 3025/1		Verify illumination function
C800	Capacitor	RJC 464 3025/1		
C802	Capacitor	RJC 464 3025/1		
C803	Capacitor	RJC 464 3025/1		
C804	Capacitor	RJC 464 3025/1		
C805	Capacitor	RJC 464 3025/1		
C806	Capacitor	RJC 464 3025/1		
C810	Capacitor	RJC 464 3035/33	Audio problems	Verify handsfree mic function

ROA 117 3982				
Pos.	**Description**	**Part Number**	**Ref.**	**Comments**
C812	Capacitor	RJC 516 3525/68	Audio problems	Verify handsfree mic function
C813	Capacitor	RJC 516 3547/22	Audio problems	Verify handsfree earphone function
C817	Capacitor	RJC 464 3024/1	Audio problems	Verify handsfree mic function
C818				Not mounted
C821				Not mounted
C822				Not mounted
C823				Not mounted
C824	Capacitor	RJC 464 3025/1		Verify display function
C825	Capacitor	RJC 463 3022/22		
C833	Capacitor	RJC 516 3525/68		
C846				Not mounted
C850	Capacitor	RJC 516 3525/68	Audio problems	
C853	Capacitor	RJC 516 3525/68		
C854	Capacitor	RJC 516 3525/68		
C855	Capacitor	RJC 516 3525/68		
C860	Capacitor	RJC 463 3022/22		Verify mic function
C861	Capacitor	RJC 464 3024/1		Verify mic function
C862	Capacitor	RJC 464 3047/1	Audio problems	Verify mic function
C863	Capacitor	RJC 464 3035/68	Audio problems	Verify mic function
C864	Capacitor	RJC 463 3022/22		Verify mic function
C865	Capacitor	RJC 464 3035/68		Verify mic function
C870				Not mounted
C871				Not mounted
C872				Not mounted
C873				Not mounted
C874	Capacitor	RJC 463 3022/22		
C875	Capacitor	RJC 463 3022/22		
C900	Capacitor	RJC 464 3025/1		
C902	Capacitor	RJC 464 3025/1		
C903	Capacitor	RJC 464 3025/1		
C904	Capacitor	RJC 464 3025/1		
C905	Capacitor	RJC 464 3025/1		
C906	Capacitor	RJC 464 3025/1		
C907	Capacitor	RJC 464 3025/1		
C908	Capacitor	RJC 463 3022/22		
C909	Capacitor	RJC 463 3022/22		
C910	Capacitor	RJC 463 3023/1		
D300	Microcircuit			Not available
D430	Resistor	REP 015 136/3		
D431	Resistor	REP 015 136/3		
D553	Quartzcrystal filter	RTN 202 914/1 R1		
D600	Prod. Adapt. Circuit	ROP 101 1113/5C R8A		uBGA component, Additional Soldering Process required.
D610	Microcircuit	RYT 118 6098/1		uBGA component, Additional Soldering Process required.
D630	Microcircuit			Not available
D900	Functional circuit			Not available

ROA 117 3982				
Pos.	**Description**	**Part Number**	**Ref.**	**Comments**
F601	Varistor	REY 203 08/1		Verify handsfree earphone function
F603	Varistor	REY 203 08/1		Verify handsfree mic function
H600	Buzzer	KLJ 107 17/01	Alert problems	Verify buzzer function
H650	Light emitting diode	RKZ 433 666/1	Alert problems	Verify red/green top indicator
J603	Holder	RNK 860 53/01	SIM problems	Verify SIM function
L200	Inductor	REG 724 9342/18		
L201	Inductor	REG 724 9342/18		
L202	Inductor	REG 724 9342/33		
L203	Inductor	REG 724 9342/33		
L204	Inductor	REG 724 9341/82	Network problems	
L205	Inductor	REG 724 9341/68		
L206				Not mounted
L207	Inductor	REG 724 9342/15		
L208	Inductor	REG 724 9342/27		
L211	Inductor	REG 724 9342/33	Network problems	
L300	Inductor	REG 704 494/22		
L301				Not mounted
L330	Inductor	Advanced		
L331	Inductor	Advanced		
L340	Inductor	REG 704 494/56		
L360	Transformer			Advanced
L361	Transformer			Advanced
L370	Transformer	REG 706 18/1	Network problems	
L445	Inductor	REG 724 9301/33		
L450	Transformer	REG 704 1122/18		
L455	Inductor	REG 724 9301/56		
L500	Inductor	REG 724 222/22	Network problems	
L750	Inductor	REG 704 0536/56	Display/Illumination problems	Verify illumination function
L810	Emi filter	REG 706 18/2		
L811	Emi filter	REG 706 18/2		
N200	Microcircuit	RYT 901 903/1 R1A	Network problems	
N201	Transformer	REG 135 99/2	Network problems	
N234	Prod. Adapt. Circuit		Network problems	Advanced
N330	Oscillator			Advanced
N331	Oscillator			Advanced
N332	Transformer			Advanced
N333	Transformer			Advanced
N400	Amplifier		Network problems	Advanced
N502	Microcircuit	RYT 113 6167/1	Network problems	
N551	Oscillator		Network problems	Advanced
N552	Transformer	REG 135 94/1		
N700	Prod. Adapt. Circuit			BGA Advanced
N740	Microcircuit	RYT 113 6157/1	On/Off problems	
N750	Prod. Adapt. Circuit	ROP 101 1129/C R1A	Display/Illumination problems	

ROA 117 3982				
Pos.	**Description**	**Part Number**	**Ref.**	**Comments**
N800	Prod. Adapt. Circuit		Audio problems	BGA Advanced
R200	Resistor	REP 622 453/27		
R201	Resistor	REP 622 455/1		
R202	Resistor	REP 622 654/47		
R220	Resistor	REP 622 654/27	Network problems	
R221	Resistor	REP 622 654/27	Network problems	
R222	Resistor	REP 622 654/27	Network problems	
R223	Resistor	REP 622 654/27	Network problems	
R303	Resistor	REP 622 452/18	Network problems	
R311	Resistor	REP 622 454/56		
R312	Resistor	REP 622 454/27		
R320	Resistor			Advanced
R321	Resistor			Advanced
R330	Resistor	REP 622 452/1		Verify vibrator function
R345	Resistor	REP 622 452/18	Network problems	
R346	Resistor	REP 622 453/39		
R360	Resistor			Advanced
R361	Resistor			Advanced
R362	Resistor	REP 622 655/18	Network problems	
R363	Resistor	REP 622 453/12		
R380	Resistor			Advanced
R381	Resistor	REP 622 452/1		
R382	Resistor	REP 622 453/47		
R410	Resistor	REP 622 455/47		
R413	Resistor	REP 622 452/27		
R414	Resistor	REP 622 455/15		
R415	Resistor	REP 622 455/1		
R416	Resistor	REP 622 454/1		
R420	Resistor	REP 622 455/1		
R421	Resistor	REP 622 455/1		
R422	Resistor	REP 622 454/1		
R423	Resistor	REP 622 454/22		
R425				Not mounted
R426	Resistor	REP 622 453/47		
R427	Resistor	REP 622 454/1		
R428	Resistor	REP 622 001/0		
R503	Resistor	REP 624 001/0		
R504	Resistor	REP 624 650/56		
R532	Resistor	REP 622 454/56		
R591	Resistor	REP 622 453/22		
R592	Resistor	REP 622 452/56		
R603	Resistor	REP 624 001/0	Alert problems	Verify buzzer function
R610	Resistor	REP 622 001/0		Verify display function
R614	Resistor	REP 622 001/0	Display/Illumination problems	Verify display function
R615	Resistor	REP 622 001/0	Display/Illumination problems	Verify display function
R619	Resistor	REP 622 454/68	Display/Illumination problems	
R620	Resistor	REP 622 454/68	Display/Illumination problems	

ROA 117 3982				
Pos.	**Description**	**Part Number**	**Ref.**	**Comments**
R621	Resistor	REP 622 453/22		Verify flash function
R622	Resistor	REP 622 453/47		Verify flash function
R623	Resistor	REP 622 453/47		Verify flash function
R624	Resistor	REP 622 455/39		Verify flash function
R625	Resistor	REP 622 453/22		Verify flash function
R626	Resistor	REP 622 455/1		Verify flash function
R627	Resistor	REP 622 653/33	Alert problems	Verify vibrator function
R628	Resistor	REP 622 654/15	Alert problems	Verify vibrator function
R629	Resistor	REP 622 455/1		
R630	Resistor	REP 622 001/0		
R631	Resistor	REP 622 001/0		
R632				Not mounted
R634	Resistor	REP 622 453/22		Verify flash function
R635	Resistor	REP 622 453/22		Verify flash function
R636	Resistor	REP 622 453/47		Verify flash function
R637	Resistor	REP 622 454/1		
R638	Resistor	REP 622 453/47		Verify flash function
R639	Resistor	REP 622 452/1		Verify display function
R640	Resistor	REP 622 452/82	Audio problems	
R642	Resistor			Advanced
R643	Resistor			Advanced
R644	Resistor			Advanced
R645	Resistor			Advanced
R646	Resistor	REP 622 453/22	Alert problems	Verify red/green top indicator
R650	Resistor	REP 622 456/1		Verify flash function
R651	Resistor	REP 622 454/1	Alert problems	Verify buzzer function
R652	Resistor	REP 622 456/1		Verify flash function
R682	Resistor	REP 622 454/1	Alert problems	Verify vibrator function
R683	Resistor	REP 622 656/1	Alert problems	Verify vibrator function
R697	Resistor	REP 622 455/1		
R700	Resistor	REP 622 654/33		Verify Real Time Clock
R701	Resistor			Advanced
R704				Not mounted
R705	Resistor	REP 622 001/0		
R706				Not mounted
R710	Resistor		Capacity/Charging problems	Advanced
R711	Resistor	REP 622 001/0	Capacity/Charging problems	Verify charging function
R730	Resistor	REP 622 455/15	SIM problems	
R731	Resistor	REP 622 452/33	SIM problems	Verify SIM function
R732	Resistor	REP 622 451/68	SIM problems	Verify SIM function
R733	Resistor	REP 622 452/33	SIM problems	Verify SIM function
R734	Resistor	REP 622 455/1	SIM problems	Verify SIM function
R746	Resistor	REP 622 454/1		
R750	Resistor	REP 622 455/1	Display/Illumination problems	Verify illumination function
R751	Resistor	REP 622 455/15		Verify illumination function
R802	Resistor	REP 622 454/39	Audio problems	Verify handsfree mic function

ROA 117 3982				
Pos.	**Description**	**Part Number**	**Ref.**	**Comments**
R803	Resistor	REP 622 454/1	Audio problems	Verify handsfree mic function
R804	Resistor	REP 622 456/1	Audio problems	Verify handsfree earphone function
R805	Resistor	REP 622 455/15	Audio problems	Verify handsfree mic function
R807	Resistor	REP 622 656/1		Verify display function
R808	Resistor	REP 622 655/33		Verify display function
R809	Resistor	REP 622 001/0		
R810	Resistor	REP 622 001/0		
R815	Resistor	REP 622 456/1		
R820				Not mounted
R822	Resistor	REP 622 456/1		
R823	Resistor	REP 622 456/1		
R825	Resistor	REP 622 454/27	Audio problems	
R831	Resistor	REP 622 654/47		
R832	Thermistor	REZ 401 0064/47		
R843				Not mounted
R846	Resistor	Advanced		
R847	Resistor	Advanced		
R850	Resistor	REP 622 655/47	Audio problems	
R851	Resistor	REP 622 001/0		
R861	Resistor	REP 622 454/15	Audio problems	
R862	Resistor	REP 622 001/0	Audio problems	
R863	Resistor	REP 622 454/1	Audio problems	
R864	Resistor	REP 622 455/22	Audio problems	
R888	Resistor	REP 622 452/12		
R889	Resistor	REP 622 452/12		
R900	Resistor	REP 622 455/1		
R902	Resistor	REP 622 455/1		
R904	Resistor	REP 622 454/1		
R907	Resistor	REP 622 456/1		
R908	Resistor	REP 622 456/1		
R909	Resistor	REP 622 456/1		
R910				Not mounted
R911				Not mounted
R912				Not mounted
R914	Resistor	REP 622 001/0		
R915				Not mounted
R916	Resistor	REP 622 454/47		
V202	Transistor	RYN 121 6069/1		
V301	Transistor	RYN 121 6118/1		
V302	Transistor	RYN 120 664/1		
V303	Transistor	RYN 121 6069/1		
V321	Diode			Advanced
V400	Transistor			Advanced
V411	Transistor	RYN 121 6107/1		
V412	Transistor	RYN 120 671/1		
V413	Diode	RKZ 323 673/1		
V414	Transistor	RYN 121 6070/1		
V415	Transistor	RYN 121 6102/1		
V420	Transistor	RYN 121 6102/1		

ROA 117 3982				
Pos.	**Description**	**Part Number**	**Ref.**	**Comments**
V421	Transistor	RYN 120 660/1		
V500	Diode	RKZ 123 654/1	Network problems, On/Off problems	
V502	Transistor	RYN 121 6118/1		
V503	Transistor	RYN 121 6069/1		
V504	Transistor	RYN 120 664/1		
V530	Transistor	RYN 120 655/1		
V581	Transistor	RYN 901 623/2		
V600	Transistor	RYN 121 6069/1		
V603	Diode	RKZ 223 646/2		
V605	Diode	RKZ 123 647/1	Alert problems	Verify buzzer function
V606	Transistor	RYN 121 1621/1	On/Off problems, Alert problems	Verify buzzer function
V607	Transistor	RYN 121 6069/1		
V608	Diode	RKZ 123 646/1		Verify display function
V609	Diode	RKZ 323 673/1		Verify SIM function
V610	Diode	RKZ 123 647/1	On/Off problems	
V611	Diode	RKZ 123 646/1		Verify display function
V612	Diode	RKZ 123 646/2		
V620	Diode	RKZ 223 645/2		
V621	Transistor	RYN 120 629/2	Alert problems	Verify vibrator function
V623	Transistor	RYN 121 6008/1	Alert problems	Verify vibrator function
V710	Transistor	RYN 122 641/1	Capacity/Charging problems	Verify charging function
V807	Diode	RKZ 123 646/2		Verify handsfree earphone function
V840	Diode			Advanced
V841	Transistor	RYN 121 6069/1		
V842	Transistor	RYN 120 665/1		
VOL1	Soldering plate			Not available
VOL2	Soldering plate			Not available
VOL3	Soldering plate			Not available
X100	Connector	RPT 403 309/1	On/Off problems	
X810	Contact	SND 210 46/1	Audio problems	
X811	Contact	SND 210 46/1	Audio problems	
Z200	Quartzcrystal filter	RTN 201 908/1 R1A	Network problems, On/Off problems	
Z201	Quartzcrystal filter	RTN 201 906/1 R1A	Network problems, On/Off problems	

3 Revision History

Rev.	Date	Changes / Comments
A	2000-05-05	

Component Placing

Applicable for R310s and R310sc

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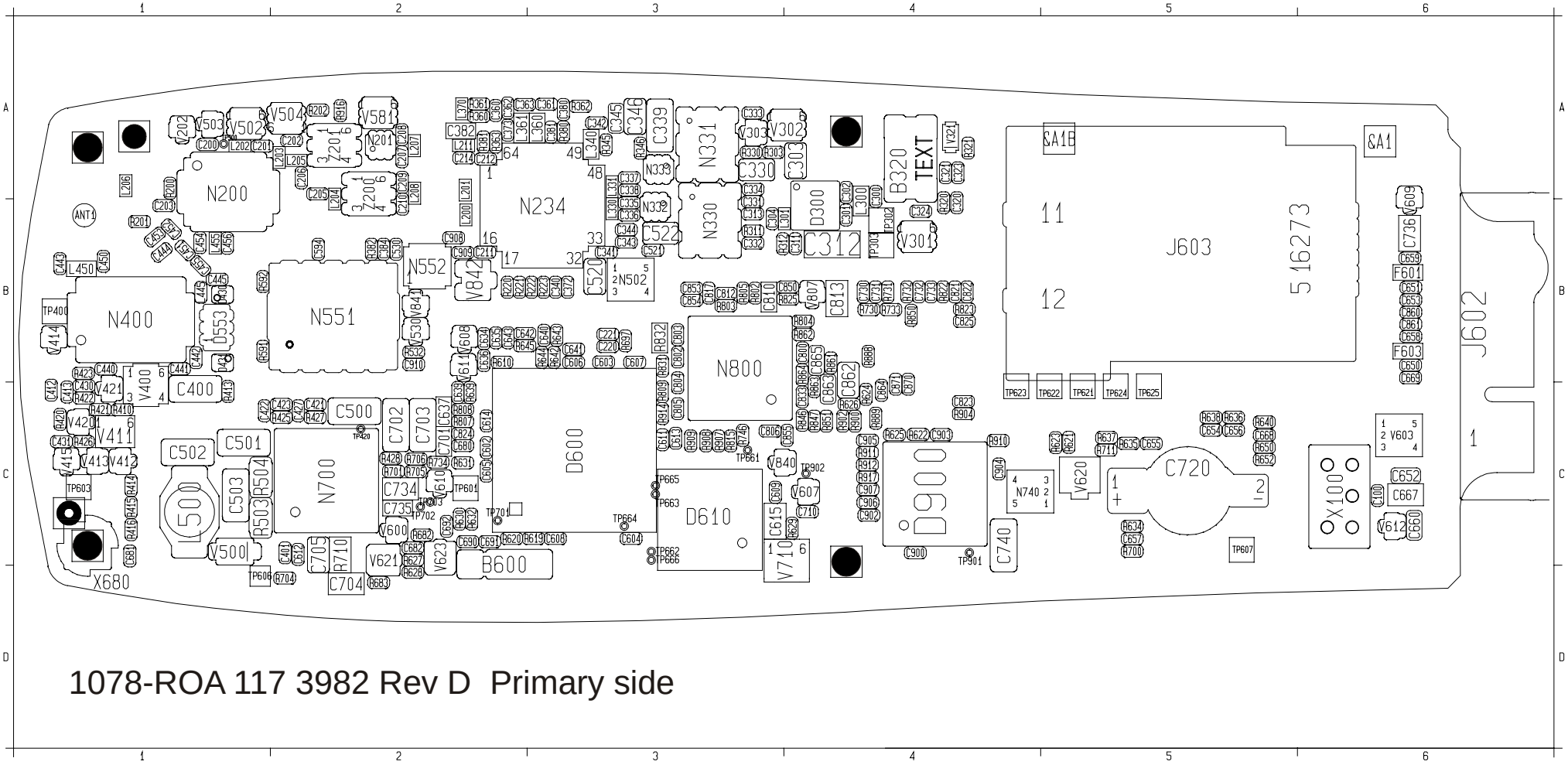
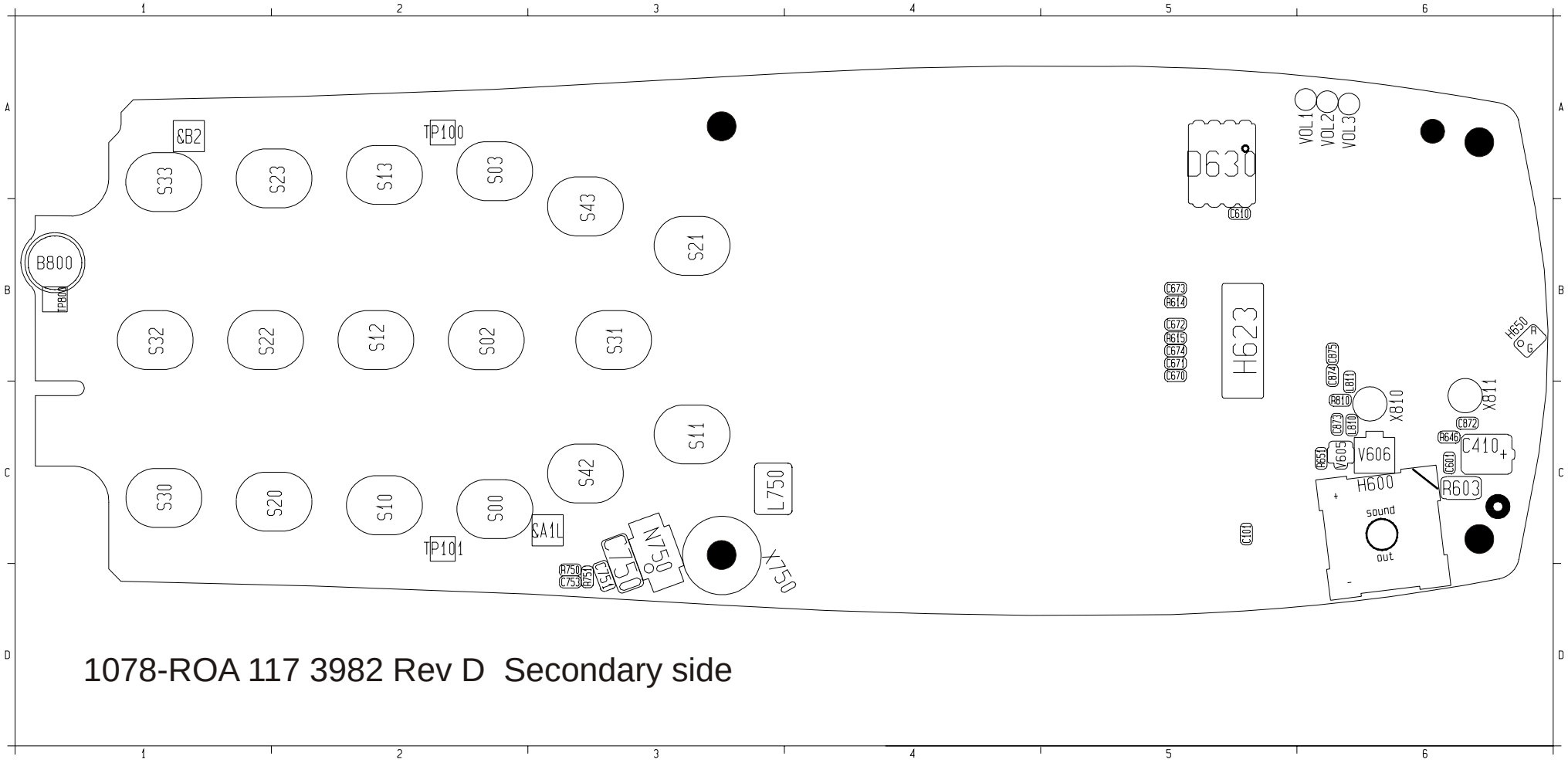
1 Mounting Drawing Table

Board Number	Mounting Drawing
ROA 117 3982 R1E	1078-ROA 117 3982 Rev D

2 1078-ROA 117 3982 Rev D



1078-ROA 117 3982 Rev D Primary side



1078-ROA 117 3982 Rev D Secondary side

2.1 Component Position Location Table for 1078-ROA 117 3982 Rev D

1. located on primary side
2. located on secondary side

Pos.	Loc.
ANT1	1-B1
B320	1-A4
B600	1-C2
B800	2-B1
C100	1-C6
C101	2-C5
C200	1-A1
C201	1-A1
C202	1-A2
C203	1-B1
C205	1-A2
C206	1-A2
C207	1-A2
C208	1-A2
C209	1-A2
C210	1-B2
C211	1-B2
C212	1-A2
C214	1-A2
C221	1-B3
C300	1-A4
C301	1-B4
C302	1-A4
C303	1-A4
C304	1-B3
C311	1-B4

Pos.	Loc.
C312	1-B4
C313	1-B3
C320	1-B4
C321	1-A4
C323	1-A4
C324	1-B4
C330	1-A3
C331	1-B3
C332	1-B3
C333	1-A3
C334	1-A3
C335	1-B3
C336	1-B3
C337	1-A3
C338	1-A3
C339	1-A3
C340	1-B3
C341	1-B3
C342	1-A3
C343	1-B3
C344	1-B3
C345	1-A3
C346	1-A3
C360	1-A2
C361	1-A3
C362	1-A2

Pos.	Loc.
C363	1-A2
C372	1-B3
C373	1-A2
C380	1-A3
C381	1-A3
C382	1-A2
C384	1-B2
C400	1-C1
C401	1-C2
C410	2-C6
C412	1-C1
C413	1-C1
C421	1-C2
C422	1-C1
C423	1-C2
C427	1-C2
C430	1-C1
C431	1-C1
C440	1-B1
C441	1-B1
C442	1-B1
C443	1-B1
C444	1-B1
C445	1-B1
C450	1-B1
C451	1-B1

Pos.	Loc.
C452	1-B1
C453	1-B1
C454	1-B1
C455	1-B1
C456	1-B1
C500	1-C2
C501	1-C1
C502	1-C1
C503	1-C1
C520	1-B3
C521	1-B3
C522	1-B3
C530	1-B2
C594	1-B2
C601	2-C6
C602	1-C2
C603	1-B3
C604	1-C3
C605	1-C2
C606	1-B3
C607	1-B3
C608	1-C3
C609	1-C3
C610	2-B5
C611	1-C3
C612	1-C2

Pos.	Loc.
C613	1-C3
C614	1-C2
C615	1-C3
C634	1-B2
C635	1-B2
C636	1-B2
C637	1-C2
C639	1-C2
C640	1-B3
C641	1-B3
C642	1-B2
C643	1-B2
C650	1-B6
C651	1-B6
C652	1-C6
C653	1-B6
C654	1-C5
C655	1-C5
C656	1-C5
C657	1-C5
C658	1-B6
C659	1-B6
C660	1-C6
C667	1-C6
C668	1-C5
C669	1-B6

Pos.	Loc.
C670	2-B5
C671	2-B5
C672	2-B5
C673	2-B5
C674	2-B5
C680	1-C2
C681	1-C1
C682	1-C2
C690	1-C2
C691	1-C2
C692	1-C2
C701	1-C2
C702	1-C2
C703	1-C2
C704	1-D2
C705	1-C2
C710	1-C4
C720	1-C5
C730	1-B4
C731	1-B4
C732	1-B4
C733	1-B4
C734	1-C2
C735	1-C2
C736	1-B6
C740	1-C4

Pos.	Loc.
C750	2-C3
C751	2-D3
C753	2-D3
C800	1-B4
C802	1-B3
C803	1-B3
C804	1-B3
C805	1-C3
C806	1-C3
C810	1-B3
C812	1-B3
C813	1-B4
C817	1-B3
C821	1-B4
C822	1-B4
C823	1-C4
C824	1-C2
C825	1-B4
C833	1-C4
C850	1-B4
C853	1-B3
C854	1-B3
C855	1-C4
C860	1-B6
C861	1-B6
C862	1-B4

Pos.	Loc.
C863	1-C4
C864	1-C4
C865	1-B4
C870	1-C4
C871	1-C4
C872	2-C6
C873	2-C6
C874	2-B6
C875	2-B6
C900	1-C4
C902	1-C4
C903	1-C4
C904	1-C4
C905	1-C4
C906	1-C4
C907	1-C4
C908	1-B2
C909	1-B2
C910	1-B2
D300	1-B4
D430	1-B1
D431	1-B1
D553	1-B1
D600	1-C3
D610	1-C3
D630	2-A5
D900	1-C4
F601	1-B6
F603	1-B6
H600	2-C6
H623	2-B5
H650	2-B6
J602	1-B6
J603	1-B5
L200	1-B2

Pos.	Loc.
L201	1-A2
L202	1-A1
L203	1-A2
L204	1-A2
L205	1-A2
L206	1-A1
L207	1-A2
L208	1-A2
L211	1-A2
L300	1-B4
L301	1-B3
L330	1-B3
L331	1-A3
L340	1-A3
L360	1-A3
L361	1-A2
L370	1-A2
L445	1-B1
L450	1-B1
L455	1-B1
L500	1-C1
L750	2-C3
L810	2-C6
L811	2-B6
N200	1-A1
N201	1-A2
N234	1-B3
N330	1-B3
N331	1-A3
N332	1-B3
N333	1-A3
N400	1-B1
N502	1-B3
N551	1-B2
N552	1-B2

Pos.	Loc.
N740	1-C4
N750	2-C3
N800	1-B3
R200	1-A1
R201	1-B1
R202	1-A2
R220	1-B2
R221	1-B2
R222	1-B3
R223	1-B3
R303	1-A3
R311	1-B3
R312	1-B3
R320	1-B4
R321	1-A4
R330	1-A3
R345	1-A3
R346	1-A3
R360	1-A2
R361	1-A2
R362	1-A3
R363	1-A2
R380	1-A3
R381	1-A2
R410	1-C1
R413	1-C1
R414	1-C1
R415	1-C1
R416	1-C1
R420	1-C1
R421	1-C1
R422	1-C1
R423	1-B1
R425	1-C2
R427	1-C2

Pos.	Loc.
R428	1-C2
R503	1-C1
R504	1-C1
R591	1-B1
R592	1-B1
R603	2-C6
R610	1-B2
R614	2-B5
R615	2-B5
R619	1-C3
R620	1-C2
R621	1-C5
R622	1-C4
R623	1-C5
R624	1-C4
R625	1-C4
R626	1-C4
R627	1-C2
R628	1-D2
R629	1-C4
R630	1-C2
R631	1-C2
R632	1-C2
R634	1-C5
R635	1-C5
R636	1-C5
R637	1-C5
R638	1-C5
R639	1-C2
R640	1-C5
R642	1-B3
R643	1-B3
R644	1-B3
R645	1-B2
R646	2-C6

Pos.	Loc.
R650	1-C5
R651	2-C6
R652	1-C5
R682	1-C2
R683	1-D2
R697	1-B3
R700	1-C5
R701	1-C2
R704	1-D2
R705	1-C2
R706	1-C2
R710	1-C2
R711	1-C5
R730	1-B4
R731	1-B4
R732	1-B4
R733	1-B4
R734	1-C2
R746	1-C3
R750	2-D3
R751	2-D3
R802	1-B3
R803	1-B3
R804	1-B4
R805	1-B3
R807	1-C2
R808	1-C2
R809	1-C3
R810	2-C6
R815	1-C3
R822	1-B4
R823	1-B4
R825	1-B4
R831	1-B3
R832	1-B3

Pos.	Loc.
R846	1-C4
R847	1-C4
R850	1-B4
R851	1-C4
R861	1-B4
R862	1-B4
R863	1-C4
R864	1-B4
R888	1-B4
R889	1-C4
R900	1-C4
R902	1-C4
R904	1-C4
R907	1-C3
R908	1-C3
R909	1-C3
R910	1-C4
R911	1-C4
R912	1-C4
R914	1-C3
R916	1-A2
R917	1-C4
V202	1-A1
V301	1-B4
V302	1-A3
V303	1-A3
V321	1-A4
V400	1-C1
V411	1-C1
V412	1-C1
V413	1-C1
V414	1-B1
V415	1-C1
V420	1-C1
V421	1-C1

Pos.	Loc.
V500	1-C1
V502	1-A1
V503	1-A1
V504	1-A2
V530	1-B2
V581	1-A2
V600	1-C2
V603	1-C6
V605	2-C6
V606	2-C6
V607	1-C4
V608	1-B2
V609	1-B6
V610	1-C2
V611	1-B2
V612	1-C6
V620	1-C5
V621	1-C2
V623	1-C2
V710	1-C4
V807	1-B4
V840	1-C3
V841	1-B2
V842	1-B2
VOL 1	2-A6
VOL 2	2-A6
VOL 3	2-A6
X100	1-C6
X680	1-C1
X750	2-C3
X810	2-C6
X811	2-C6
Z200	1-A2
Z201	1-A2

3 Revision History

Rev.	Date	Changes / Comments
A	2000-05-05	